

Perceptions of parental acceptance-rejection in type 1 diabetic and healthy children

Parental attitude to diabetic children

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Abstract

Aim: The present study aimed to comparatively investigate the parental acceptance-rejection perceived by type 1 diabetic and healthy children and reported by their mothers. The number of studies investigating how mothers of children with chronic diseases cope with this situation is limited.

Material and Methods: The study included 52 children (aged 8-15 years) with type 1 diabetes mellitus who were followed-up in an outpatient clinic of a state hospital in Gaziantep province and their mothers (n=52). A control group was formed of 52 healthy children (aged 8-15 years) who had no chronic diseases and were residents of Gaziantep province and their mothers (n=52). The perception of parental acceptance and rejection was assessed using the Parental Acceptance-Rejection Questionnaire (PARQ; child and mother versions).

Results: The results of this study revealed that diabetic children felt lower levels of warmth/affection and higher levels of undifferentiated rejection as compared with healthy children. In addition, the undifferentiated rejection perception of mothers of diabetic children was higher than that of mothers of healthy children. Moreover, a significant inverse correlation was found between the parental attitude perceived by diabetic children and the parental attitude perceived by their mothers.

Discussion: Diabetic children felt lower levels of warmth/affection and higher levels of undifferentiated rejection as compared with healthy children. Establishing further supportive and preventive studies within the frame of parental attitude, in particular, would enable effective management of a chronic disorder.

The outcomes of this study, which investigated acceptance-rejection attitudes of mothers of type 1 diabetic children, may contribute to establish efficient and beneficial training programs for children with chronic diseases and for their families to maintain well-being and functionality.

Keywords

Chronic illness; Diabetes; Parenting

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Introduction

Diabetes mellitus (DM) is a highly prevalent chronic disease involving individuals of all ages in the population. Type 1 DM, also called as young type diabetes, is the type of diabetes seen in young adults and children. Type 2 DM is defined as adult-type diabetes [1]. Type 1 DM is a challenging disease requiring daily and life-long therapy adherence to insulin regimen and blood glucose measurement in addition to diet and physical exercise. Mental disorders and cognitive problems are common among adolescents with type 1 DM [2, 3] and psychiatric disorders associated with poor therapy adherence have been reported [4]. Parents of pediatric patients are responsible for the treatment of DM in their children; adolescents, however, manage this situation independently in a gradual manner [5]. Within this context, parents are the subjects directly witnessing the situation which the adolescents are in; thus, the process is challenging also for them. The presence of a child with a chronic disease leads to a significant burden on the family concerning care, increased demands, and rearrangement of the roles [6]. It is observed that parents are in need of better supporting tools that would help their children in coping with the difficulties they meet [7]. It is thought that mothers, the ones who take care of child particularly in our population, witness this situation [8].

The Parental Acceptance-Rejection (PAR) theory was first introduced in 1975 by Ronald Rohner and then restructured in 1986 [9, 10]. This theory existing in the literature as “PAR Theory” was developed based on the hypothesis that children’s behavior is structured within the scope of the degree of parental warmth they perceive [10]; it is a “socialization” theory investigating the effects of parental acceptance or rejection perceived in childhood on the overall compliance of a child. Acceptance is defined as warmth, affection, care, attention, and support displayed by parents towards their children and the physical and verbal behaviors of parents while they are expressing these emotions. Rejection is defined as the absence or apparent denial of these emotions and, in addition, displaying various physical or psychological behavior or emotions that hurt the child. The warmth (acceptance-rejection) and the control dimensions of the theory have been confirmed in the studies from 186 different cultures [11]. In particular, given that chronic disorders could affect the functionality of a family, it is estimated that parental acceptance-rejection perception may present data that would provide hints on this subject. Studies in this field have revealed that parental attitudes, either maternal or paternal, perceived by adolescents have distinctive outcomes in terms of social competence, self-efficacy, and sympathy [12]. Rohner and Rohner [13] defend that rejection dimension manifests itself in four different features: 1) cold and unaffectionate is defined as the overall parental behavior comprising attention or inattention given to the child; 2) hostility and aggression are defined as the states of parental hate and hostility leading to aggression of a child; 3) indifference and neglect is defined as the state of child’s needs not being met by parents and the child’s feeling him/herself as neglected; and 4) undifferentiated rejection is defined as the child’s feeling him/herself as rejected despite the absence of apparent parental attitude of rejection.

Positive and negative feedbacks are received by the subjects

from people who are responsible for their care and who can be considered as the attachment figure also have an impact on the subject’s functionality [13]. Based on these findings, it is estimated that opinions of diabetic subjects and their families on parental attitude would provide contributive information.

The present study aimed to investigate the parental attitudes perceived by type 1 diabetic children and reported by their mothers comparing with parental attitudes perceived by healthy children and reported by their mothers using the Parental Acceptance-Rejection Questionnaire (PARQ) as well as to evaluate the relationship of personal and clinical variables with parental attitudes.

Material and Methods

Study sample

The study included children/adolescents aged between 8 and 15 years with type 1 DM diagnosis, who were admitted to, treated, and followed-up in an Outpatient Clinic of a State Hospital in Gaziantep province, and their mothers. A control group was formed of healthy children/adolescents aged between 8 and 15 years who had no chronic diseases and were residents of Gaziantep province and their mothers. The participants were included only if both the mother and the child had an education level of literacy at least being able to complete the scales on their own. Children/adolescents who had a diagnosis of an endocrine disorder such as thyroid disorder, obesity, developmental problems other than type 1 DM were excluded. The study was approved by the Ethics Committee of Hasan Kalyoncu University with an approval number of 06 dated May 26, 2016. Required permissions were also obtained by consulting with the relevant outpatient clinic in the hospital. Written informed consents were obtained from the mothers both for themselves and for their children.

Data collection tools

Data collection form developed by the researchers as well as the Parental Acceptance-Rejection Questionnaire (PARQ) (mother version-Short form and child version-Short form) were applied to both diabetic and control groups.

Data collection form: Data collection form developed by the researchers is a form that includes questions inquiring information about age and gender of children, maternal age, variables concerning family life, occupational status of mothers, number of children of the mother, income level, and child’s school success. The form was developed to include different number of items for the diabetic and control groups; while the form for the control group did not include questions about any diagnosed disease, the form for the diabetic group also included DM-related questions.

The PARQ (Mother version-Short form): The PARQ is a self-report scale developed by Rohner in 1986 [14] and includes questions aiming at assessing the acceptance and rejection attitudes of parents towards their children. The initial version of PARQ consists of 73 items and 4 sub-dimensions. While 60 of 73 items assess parental acceptance and rejection, the remaining 13 items assess the behavioral control dimension. The acceptance-rejection dimension has the following 4 sub-dimensions: 1) warmth/affection, 2) hostility/aggression, 3) indifference/neglect, and 4) undifferentiated rejection. The

participants are required to respond to the questions on a 4-point Likert-scale from 1 (almost never true) to 4 (almost always true). The total score is calculated by subtracting the scores of all sub-dimensions other than the score of Warmth/Affection sub-dimension from 100. The lowest and highest scores of this scale are 60 and 240, respectively. The scale used in the present study was the short form of the original questionnaire and consists of 30 items. Higher scores indicate a rejectionist parental attitude. In the study conducted to identify the psychometric features of the questionnaire [15], the internal consistency was found as 0.75 for the maternal form and as 0.79 for the paternal form. The test-retest reliability of the questionnaire was 0.93. The Turkish validity and reliability study of the questionnaire was performed in 2003 in an unpublished study and the internal consistency coefficient was found to change from 0.86 to 0.96 both for the paternal and maternal forms. Additionally, the internal consistency coefficient of the control sub-dimension was 0.84 for maternal form and 0.83 for paternal form.

The PARQ (Child version-Short form): The PARQ-Child Form, which was first developed in 1971 by Rohner [9], aims at assessing parental attitudes perceived by children. Distribution of the items among sub-dimensions of the scale is as follows: 6 items in the Warmth/Affection sub-dimension, 6 items in the Hostility/Aggression sub-dimension, 6 items in the Indifference/Neglect sub-dimension, and 4 items in the Undifferentiated Rejection sub-dimension. The 24-item short form of the questionnaire was developed in line with the distribution of these items. This short form of the PARQ Child Form was used in the present study. As is in the parental form, the participants are required to respond to the questions on a 4-point Likert-scale from 1 (almost never true) to 4 (almost always true). The 13th item in the short form is scored reversely; higher scores obtained from this questionnaire indicate rejectionist parental attitude perceived by the children. The reliability study of the Turkish version of the PARQ-Child Short Form was performed by Yilmaz and Erkman (2008) [16].

Statistical Analysis

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS Inc., Chicago, IL, USA) for Windows version 16.0. The Chi-square analysis was performed in order to determine the differences between two groups in terms of personal and demographic variables. The normality of variables was tested and it was observed that the scale scores and variables were distributed normally; thus, the parametric tests were used. Accordingly, the independent samples t-test and the Analysis of Variance [ANOVA] were used to test differences between the variables and a correlation analysis was performed to investigate the relationship between the variables. A p-value of <0.05 was considered statistically significant.

Results

A total of 120 children returned their forms and 16 forms were excluded due to missing data. In order to validate data analysis, the number was equalized. Accordingly, the present study included 52 diabetic children who composed the diabetic group and their mothers (n=52) and 52 healthy children who composed control group and their mothers (n=52). The general

Table 1. General characteristics of children in the diabetic and healthy control groups as well as disease-related characteristics of the children in the diabetic group

	Diabetic Group [n=52]	Control group [n=52]
Gender		
Boy	25 [51.9]	15 [71.2]
Girl	27 [48.1]	37 [28.8]
Age, years		
7		1 [1.9]
8	9 [17.3]	-
9	10 [19.2]	-
10	7 [13.5]	1 [1.9]
11	4 [7.7]	10 [19.2]
12	7 [13.5]	13 [25.0]
13	7 [13.5]	11 [21.2]
14	7 [13.5]	11 [21.2]
15	1 [1.9]	5 [9.6]
Maternal age, years		
25-35	13 [25.0]	20 [38.5]
36-45	28 [53.8]	24 [46.2]
46-60	11 [21.2]	8 [15.4]
Insulin injection is performed by		
Mother	15 [28.8]	-
Child	34 [65.4]	-
Father	3 [5.8]	-
Number of hospitalization due to the disease		
1	13 [25.0]	-
2	20 [38.5]	-
3	12 [23.1]	-
4	3 [5.8]	-
≥5	4 [7.7]	-
Absence from school due to the disease		
Yes	39 [75.0]	-
No	19 [25.0]	-
Time elapsed from the diagnosis, years		
1	10 [5.7]	-
2	11 [21.2]	-
3	8 [15.4]	-
4	11 [21.2]	-
≥5 years	12 [23.1]	-

characteristics of the diabetic and healthy control groups as well as disease-related characteristics of the diabetic group are presented in Table 1. The distribution of girls and boys was similar in the diabetic group, whereas the number of girls was much higher than the number of boys in the healthy control group. In the diabetic group, the age distribution of the children ranged from 8 to 15 years, with the highest percentage of children being at the age of 9 years. In addition, the age distribution of the mothers ranged from 25 to 59 years in the diabetic group. In the healthy control group, the age distribution of the children ranged from 8 to 15 years, with the highest percentage of children being at the age of 12 years. Moreover, the age distribution of the mothers ranged from 25 to 60 years with the highest percentage of mothers being in the age range

Table 2. Parental Acceptance-Rejection Questionnaire (PARQ) scores according to the age of children in the diabetic and control groups

		Children's Age	N	Mean±SD	Minimum-Maximum	p
Diabetic Group	PARQ/Mother Version	8	9	69.22±1.856	66-71	0.004
		9	10	67.70±3.592	63-75	
		10	7	67.86±4.598	63-77	
		11	4	67.25±3.403	63-70	
		12	7	66.57±2.573	63-69	
		13	7	70.29±6.550	61-82	
		14	7	70.43±4.237	65-77	
		15	1	67.00±0.00	67-67	
		Total	52	68.50±3.978	61-82	
	PARQ/Child Version	8	9	57.22±3.032	54-62	0.081
		9	10	59.10±2.885	54-64	
		10	7	59.14±1.952	56-62	
		11	4	56.00±2.160	54-59	
		12	7	56.14±5.984	44-63	
		13	7	56.29±9.250	36-63	
		14	7	57.71±1.976	55-61	
Control Group	PARQ/Mother Version	7	1	67.00±0.000	67-67	0.630
		10	1	70.00±0.000	70-70	
		11	10	68.70±3.401	63-73	
		12	13	68.62±2.663	63-72	
		13	11	68.91±4.614	59-76	
		14	11	69.45±4.458	60-75	
		15	4	66.50±2.887	63-70	
		16	1	62.00±0.000	62-62	
		Total	52	68.58±3.707	59-76	
	PARQ/Child Version	7	1	55.00±0.000	55-55	0.718
		10	1	58.00±0.000	58-58	
		11	10	54.50±5.543	44-60	
		12	13	58.31±3.772	49-64	
		13	11	56.18±2.926	49-60	
		14	11	56.91±6.139	47-67	
		15	4	55.75±2.062	54-58	
		16	1	55.00±0.00	55-55	
		Total	52	56.50±4.466	44-67	

PARQ, Parental Acceptance-Rejection Questionnaire; SD, standard deviation.

of 36-45 years. Evaluation of the clinical variables relevant to DM revealed that the majority of children were hospitalized twice for treatment. Based on the mothers' self-report, the rate of absence from school for diabetic children due to their disease was 75%. The time elapsed after the diagnosis of diabetes was ≥5 years in 23.1% of the diabetic group. All children in the diabetic group were receiving insulin therapy; the majority of the children were performing their own insulin injection. The PARQ scores according to the age of children in the diabetic and control groups are presented in Table 2.

The comparison of the PARQ score according to gender, maternal age, and the variable "family member performing the insulin injection" in the diabetic and control groups are presented in Table 3. In the diabetic group, the mean score of the PARQ-Mother version of the girls was significantly higher than that

Table 3. Comparison of Parental Acceptance-Rejection Questionnaire (PARQ) score in the diabetic and control groups according to gender, maternal age, and the family member performing the insulin injection

		Children's Age	N	Mean±SD	Minimum-Maximum	p
Diabetic Group	PARQ/Mother Version	Girl	27	69.48±4.210	63-82	0.004
		Boy	25	67.44±3.489	61-75	
		Total	52	68.50±3.978	61-82	
	PARQ/Child Version	Girl	27	58.15±2.349	54-63	0.326
		Boy	25	56.92±5.958	36-64	
		Total	52	57.56±4.461	36-64	
Control Group	PARQ/Mother Version	Girl	37	68.86±4.001	59-76	0.384
		Boy	15	67.87±2.850	63-72	
		Total	52	68.58±3.707	59-76	
	PARQ/Child Version	Girl	37	56.89±4.149	45-67	0.325
		Boy	15	55.53±5.194	44-64	
		Total	52	56.50±4.466	44-67	
Diabetic Group	PARQ/Mother Version	Maternal age				0.579
		25-35 years	13	70.92±4.092	63-77	
		36-45 years	28	68.89±4.140	63-82	
		46-60 years	11	67.00±3.347	61-72	
		Total	52	68.50±3.978	61-82	
	PARQ/Child Version	25-35 years	13	57.54±4.977	44-64	0.547
36-45 years		28	57.82±2.374	54-62		
46-60 years		8	57.88±3.980	54-67		
Total		52	56.50±4.466	44-67		
Diabetic Group	PARQ/Mother Version	Insulin injection is performed by				0.267
		Mother	15	69.87±2.475	66-77	
		Child	34	68.03±4.203	61-82	
		Father	3	67.00±6.928	63-75	
		Total	52	68.50±3.978	61-82	
	PARQ/Child Version	Mother	15	57.87±2.850	54-62	0.744
		Child	34	57.59±4.513	36-63	
		Father	3	55.67±10.408	44-64	
		Total	52	57.56±4.461	36-64	

PARQ, Parental Acceptance-Rejection Questionnaire; SD, standard deviation.

of the boys (p=0.004). The parental attitude perceived by the children did not differ according to child gender (p=0.326). In the diabetic group, the parental acceptance-rejection attitude of the mothers did not change according to the maternal age (p=0.579). Likewise, the parental acceptance-rejection attitude perceived by the children did not differ according to the maternal age (p=0.547). In the control group, the parental acceptance-rejection attitude of the mothers and perceived by the children did not significantly differ according to the maternal age (p=0.838 and p=0.191). The parental attitude of the mothers and perceived by the children did not differ according to family member performing insulin injection (p=0.267 and p=0.744, respectively) in the diabetic group. According to the results of "independent samples t-test" performed to compare the scores of sub-dimensions of the PARQ between the diabetic and

control groups, there was a significant difference between the groups in terms of “Undifferentiated Rejection” sub-dimension of the PARQ-Mother version with a significantly higher level of undifferentiated rejection determined in the diabetic group than in the control group ($p=0.003$). In addition, a significant difference was determined between the diabetic and control groups in terms of the “Warmth/Affection” sub-dimension of the PARQ-Child version ($p=0.004$). Accordingly, the mean score of “Warmth/Affection” sub-dimension of the PARQ-Child version was significantly higher in the diabetic group than in the control group. Since this sub-dimension is scored inversely while calculating the total score, the warmth/affection attitude was significantly lower in the diabetic group than in the healthy control group. “Undifferentiated Rejection” in the PARQ-Child version was another sub-dimension showing a significant difference between the groups. Accordingly, the mean score of the undifferentiated rejection sub-dimension was significantly higher in the diabetic group than in the control group ($p=0.003$). According to the results of the correlation analysis of the sub-dimensions of the Parental Acceptance-Rejection Questionnaire for both Mother and Child versions for the control group and for the diabetic group, different levels of significant correlation were determined between the sub-dimensions.

Discussion

The present study aimed to determine whether there was a difference between parental acceptance-rejection perceived by diabetic children and perceived by their mothers concerning the diagnosis of DM, whether there was a difference between the maternal attitude perceived by the diabetic children and the maternal attitude perceived by the healthy children, and whether there was a significant difference between the parental attitude perceived by the healthy children and the parental attitude reported by their mothers. Accordingly, significant differences were determined between the diabetic and healthy control groups in terms of the scores of “Warmth/Affection”, “Undifferentiated Rejection” sub-dimensions of the PARQ-Child version and in terms of “Undifferentiated Rejection” sub-dimensions of the PARQ-Mother version. Hence, the diabetic children were determined to feel lower levels of warmth/affection and higher levels of undifferentiated rejection as compared with healthy children. In addition, in terms of mothers’ perception on parental attitude, the mean score of “Undifferentiated Rejection” sub-dimension was significantly higher in the mothers of diabetic children than in the mothers of healthy children.

Treatment of type 1 DM is a multifactorial approach requiring the active involvement of all family members [17]. Williams et al. [18] carried out a study on 187 patients aged between 10 and 17 years to investigate diabetes-specific family conflict, adolescent depression, and depression and anxiety in the family. They reported increased diabetes-specific family conflict with psychological stress existing in the parents, children, and adolescents. They also stated that pediatric type 1 DM was usually defined as “family disease” due to the critical role of family interaction and parental support [18]. Noueiri et al. [19] conducted a study in the families of 37 type 1 diabetic patients and reported that 75.7% of the families felt guilty about their

children’s condition and that 97.3% of the mothers needed to be with diabetic children longer than necessary. Cavini et al. [20] attributed this behavior to the fact that mothers take the responsibility of home care and accordingly blame themselves when their children get sick and balance this feeling with providing the most intensive care to their children. In another study, 132 type 1 diabetic children with a mean age of 12 years were interviewed once in a year for five years and the level of perceived stress by the families due to the child’s illness was investigated with one of the parents completing the questionnaire [21]. It was determined that the stress experienced by the parents has an impact on their quality of life and wellness and might be negatively influenced during the child’s disease process [21].

In the present study, the type 1 diabetic and healthy control children, as well as their mothers, were separately evaluated to assess parental attitude perceived by the children and by the mothers. The age of the children ranged from 8 to 15 years both in the diabetic group and in the healthy control group. The ratio of children was the highest at the age of 9 years in the diabetic group and at the age of 12 years in the control group. There was no child at the age of 8 or 9 years in the healthy control group.

In the healthy control group, no difference was observed in the parental acceptance-rejection attitude perceived by the mothers according to child age ($p=0.630$). Likewise, there was also no difference in the parental attitude perceived by the children according to child age ($p=0.718$). In the diabetic group, the parental acceptance-rejection perceived by the mothers significantly differed according to child age ($p=0.004$), whereas the parental attitude perceived by the children did not differ according to child age ($p=0.081$). These outcomes appear to be consistent with those in the literature. In the literature, it was reported that the families of 13-17-year-old adolescents with type 1 DM were less frequently involved in blood glucose monitoring and insulin injection as compared with the families of the younger diabetic patients aged 8-12 years, resulting in adolescents’ having the risk of not receiving adequate parental support concerning care and adherence to treatment from the beginning of the diagnosis of diabetes [22, 23]. Nevertheless, in the present study, it was observed that the parental acceptance-rejection perceived by the mothers did not differ according to the family member performing insulin injection ($p=0.267$). Likewise, the parental acceptance-rejection perceived by the child did not differ according to the family member performing insulin injection [$p=0.744$]. Moreover, in the diabetic group, the mean score of the PARQ-Mother version was significantly higher in the mothers of the girls than in those of the boys ($p=0.004$).

Study Limitations

The outcomes of the present study include findings that may contribute to the support and trainings required particularly for the children and adolescents diagnosed with Type 1 DM and for their families. Nevertheless, the study has limitations in terms of methodology and study sample. First, the study sample was selected from a single province and was thereby considered limited in terms of the probability of providing data to make a conclusion for the overall population in Turkey. In addition,

the questionnaires used in the present study are limited to the items they contain in measuring the study variables. This poses a limitation in terms of the likelihood of the presence of different factors that were not evaluated. Another limitation was the outcomes obtained in the study, which were based on participants' answers to the questions. The age of the diabetic and healthy control children ranged from 8 to 15 years and they answered the questionnaires after the informed consent was obtained from their parents. The answers given by the children, who can be considered as a sensitive population, are thought to pose a limitation to the study outcomes.

Conclusions

The results of the present study revealed that the diabetic children felt lower levels of warmth/affection and higher levels of undifferentiated rejection compared with healthy children. In addition, the undifferentiated rejection perception of the mothers of diabetic children was higher than that of the mothers of healthy children. An inverse correlation was found between the parental attitude perceived by the diabetic children and the parental attitude perceived by their mothers. It was determined that the parental attitude perceived by the children was much closer to the rejection as compared with that reported by the mothers. In the control group, the parental attitude perceived by the children with that perceived by their mothers revealed a correlation in the same direction with those of the diabetic group but in different sub-dimensions.

Establishing further supportive and preventive studies within the frame of family living and parental attitude, in particular, would enable effective management of a chronic disorder such as diabetes, which has a high prevalence and requires rearrangement of living conditions of children and adolescents. It is thought that measurement tools that would assess the compliance process and wellbeing of not only children/adolescents but also families could be included in future studies. Moreover, personal and clinical variables considered to be potentially associated with DM such as depression, anxiety, negative thought patterns and eating attitude, which might reflect the psychopathology in children and adolescents, are also assumed to be included in future studies. Accordingly, this may allow discussing the factors considered to be challenging for children, adolescents, and their parents during the disease process in different aspects.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

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